

IN THE CLAIMS:

Please AMEND the claims and ADD new claims as indicated below:

1. (CURRENTLY AMENDED) A method of compensating waveform degradation on a transmission signal by using a plurality of compensation circuits, comprising ~~the steps of:~~

a) ~~—providing at least one of code error information and code error correction information on the compensated transmission signal for which the compensation has been performed by the plurality of compensation circuits, to respective ones of the plurality of compensation circuits; and~~

b) ~~—selecting controlling each one of the plurality of compensation circuits and controlling the selected compensation individually circuit based on the ~~thus provided at least one of the code error information and code error correction information so as~~ provided information to compensate the waveform degradation on the transmission signal.~~

2. (ORIGINAL) The method as claimed in claim 1, wherein said plurality of compensation circuits performs at least two of output power control, chirp parameter control, transmission-end variable dispersion compensation control, polarization dispersion compensation control, reception-end variable dispersion compensation control, reception-end identification level control and identification phase control.

3. (CURRENTLY AMENDED) The method as claimed in claim 1, wherein said selecting step a) comprises ~~the step of~~ selecting one of the plurality of compensation circuits one by one, and said providing comprises providing to the thus-selected one at least one of the code error information and code error correction information ~~on the transmission signal for which the compensation control has been performed by the plurality of compensation circuits.~~

4. (CURRENTLY AMENDED) The method as claimed in claim 3, wherein said ~~step a)~~ providing stops provision of the at least one of the code error information and code error correction information when substantially no more code error or code error correction occurs.

5. (CURRENTLY AMENDED) The method as claimed in claim 3, wherein said ~~step a)~~ providing continues operation of providing the at least one of the code error information and code error correction information until the difference between a current set value and a preceding set value controlling the compensation circuit becomes smaller than a predetermined target value.

6. (CURRENTLY AMENDED) The method as claimed in claim 3, wherein said step ~~a)providing~~ starts provision of the at least one of the code error information and code error correction information when at least one of code error rate or code error correction rate on the transmission signal exceeds a predetermined threshold.

7. (ORIGINAL) The method as claimed in claim 1, wherein said plurality of compensation circuits comprises those provided in both a transmission end and a reception end of transmission of the transmission signal.

8. (CURRENTLY AMENDED) A transmission characteristic compensation apparatus which compensates waveform degradation on a transmission signal by using a plurality of compensation circuits, comprising:

a ~~first part~~ providing unit which provides at least one of code error information and code error correction information on the compensated transmission signal ~~for which the compensation has been performed by the plurality of compensation circuits, to respective ones of the plurality of compensation circuits; and~~

a ~~second part~~ controlling unit which selects each one of the plurality of compensation circuits and controls the selected compensation individually circuit based on the ~~thus provided at least one of the code error information and code error correction information so as information provided by the providing unit~~ to compensate the waveform degradation on the transmission signal.

9. (CURRENTLY AMENDED) A transmission characteristic compensation system for compensating waveform degradation on a transmission signal by using a plurality of compensation circuits, comprising:

a ~~first part~~ providing unit which provides at least one of code error information and code error correction information on the compensated transmission signal ~~for which the compensation has been performed by the plurality of compensation circuits, to respective ones of the plurality of compensation circuits; and~~

a ~~second part~~ controlling unit which each selects one of the compensation circuits individually and controls the selected compensation circuit based on the ~~thus provided at least one of the code error information and code error correction information so as information provided by the providing unit~~ to compensate the waveform degradation on the transmission

signal.

10. (NEW) A system comprising:
a plurality of compensation units compensating waveform degradation on a transmission signal, to thereby produce a compensated transmission signal; and
a controller which, in a sequential order for each of the plurality of compensation units, detects error information in the compensated transmission signal and provides the detected error information to the respective compensation unit so that the respective compensation unit compensates the waveform degradation in accordance with the provided error information.

11. (NEW) A system as in claim 10, wherein each compensation unit comprises a control part which receives the error information and controls a compensating value based on the received error information.

12. (NEW) A system comprising:
a plurality of compensation units compensating waveform degradation on a transmission signal, to thereby produce a compensated transmission signal; and
means for, in a sequential order for each of the plurality of compensation units, detecting error information in the compensated transmission signal and providing the detected error information to the respective compensation unit so that the respective compensation unit compensates the waveform degradation in accordance with the provided error information.

13. (NEW) A apparatus comprising:
a plurality of compensation units compensating waveform degradation on a transmission signal; and
a controller detecting error information from the compensated transmission signal, selecting a respective compensation unit of the plurality of compensation units, and providing the detected error information to the selected compensation unit, wherein the selected compensation unit compensates the waveform degradation in accordance with the provided error information.

14. (NEW) An apparatus as in claim 13, wherein the controller selects the compensation units and provides the detected error information to the selected compensation units in sequence.

15. (NEW) A system comprising:

a plurality of compensators serially arranged to compensate waveform degradation on a transmission signal, to thereby produce a compensated transmission signal; and

a controller which, in a sequential order for each of the plurality of compensators, detects error information in the compensated transmission signal and provides the detected error information to the respective compensator so that the respective compensator compensates the waveform degradation in accordance with the provided error information.

16. (NEW) A system comprising:

a plurality of compensators serially arranged to compensate waveform degradation on a transmission signal, to thereby produce a compensated transmission signal; and

means for, in a sequential order for each of the plurality of compensators, detecting error information in the compensated transmission signal and providing the detected error information to the respective compensator so that the respective compensator compensates the waveform degradation in accordance with the provided error information.

17. (NEW) A system comprising:

first and second compensators arranged in series to compensate waveform degradation on a transmission signal in accordance with error information provided to the first and second compensators, to thereby produce a compensated transmission signal having waveform degradation compensated by both the first and second compensators; and

a controller

detecting error information at a first time from the compensated transmission signal, and providing the error information detected at the first time to the first compensator so that the first compensator, but not the second compensator, compensates for waveform degradation in accordance with the error information detected at the first time, and

detecting error information at a second time, after the first time and after the first compensator compensates for waveform degradation in accordance with the error information detected at the first time, from the compensated transmission signal, and providing the error information detected at the second time to the second compensator so that the second compensator, but not the first compensator, compensates for waveform degradation in accordance with the error information detected at the second

time.

18. (NEW) A system comprising:

first and second compensators arranged in series to compensate waveform degradation on a transmission signal in accordance with error information provided to the first and second compensators, to thereby produce a compensated transmission signal having waveform degradation compensated by both the first and second compensators; and

means for detecting error information at a first time from the compensated transmission signal, and for providing the error information detected at the first time to the first compensator so that the first compensator, but not the second compensator, compensates for waveform degradation in accordance with the error information detected at the first time, and

means for detecting error information at a second time, after the first time and after the first compensator compensates for waveform degradation in accordance with the error information detected at the first time, from the compensated transmission signal, and for providing the error information detected at the second time to the second compensator so that the second compensator, but not the first compensator, compensates for waveform degradation in accordance with the error information detected at the second time.